

Abstracts

These selected abstracts and titles from the world literature are arranged in the following sections:

Syphilis and other treponematoses

(Clinical and therapy; serology and biological false positive phenomenon; pathology and experimental)

Gonorrhoea

(Clinical; microbiology; therapy)

Non-specific genital infection

Reiter's disease

Trichomoniasis

Candidosis

Genital herpes

Other sexually transmitted diseases

Public health and social aspects

Miscellaneous

Syphilis and other treponematoses (Clinical and therapy)

Cerebrospinal fluid levels of benzathine penicillin G in the neonate

M. E. SPEER, L. H. TABER, D. B. CLARK
AND A. J. RUDOLPH (1977).
Journal of Pediatrics, **91**, 996-7

Infants of mothers with infectious syphilis but having no signs of congenital disease were treated with a single intramuscular injection of 100 000 units/kg benzathine penicillin G. Simultaneous serum and cerebrospinal fluid samples were collected at one of six times (6, 12, 24, 48, 72, or 120 hours) following the dose, and the penicillin content assayed. Peak serum levels occurred at 24 hours and ranged from 1.18 to 3.9 µg/ml (mean 2.54 µg/ml), and a level of <0.42 µg/ml was found 120 hours after the dose. Penicillin was found in all the CSF specimens taken at 6, 12, and 24 hours, the levels ranging from 0.012 to 0.21 µg/ml (mean 0.06 µg/ml). Of 10 specimens taken at 48 hours two had no detectable penicillin and three others levels of <0.01 µg/ml. 'Essentially no penicillin' was found in any of five specimens of CSF obtained at 120 hours after administration of the dose. The authors conclude that as optimal levels cannot be achieved in the CSF for >24 hours benzathine penicillin G cannot be recommended for the treatment of neonates with possible congenital syphilis.

P. M. Waterworth

Congenital syphilis in aborted second trimester fetus. Diagnosis by histological study

H. BRAUNSTEIN (1978). *Journal of Clinical Pathology*, **31**, 265-267

Syphilis (Serology and biological false positive phenomenon)

A novel pattern of treponemal antibody distribution in isolated South American Indian populations

R. V. LEE, F. L. BLACK,
W. J. HIERHOLZER, AND B. L. WEST (1978).
American Journal of Epidemiology, **107**, 46-53

VDRL and FTA-ABS tests were carried out on sera from three linguistically different populations of Indians in the Brazilian Amazon region who have only recently come into contact with the outside world and from Mapuche Indians in southern Chile who have been in contact with western civilisation since the last century. The social organisation and customs of these people are described.

No positive tests were found among the Parakanan and Ewarhoyana, the most recently contacted groups. A few positive tests found in adults of groups who have been in contact with the outside world for longer (Tiriyó and Mapuche) may indicate syphilis contracted from non-Indians.

In one group, the Kayapo, first contacted between 1937 and 1958, 37.3% of

the 244 persons tested had positive FTA-ABS tests. Only one of 66 children under 9 years of age was seropositive. The incidence of seropositivity rose at or after puberty and increased progressively throughout the adult age groups, reaching 89% in those over 40 years of age. No clinical evidence of present or past treponemal infection nor of urethritis or genital ulceration was found among these patients. The results suggest the presence of a treponematosis among the Kayapo which differs in its behaviour from yaws, pinta, or endemic non-venereal syphilis. It was probably present before they came into contact with the outside world. Some individuals who were seronegative when first tested have become seropositive during the past seven years; this suggests that the causative agent is still being transmitted.

A. E. Wilkinson

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Rapid detection of specific treponemal antibodies by counterimmunoelectrophoresis using an extract of *Treponema pallidum*

R. GHINSBERG, B. W. GRUMBAUM, AND G. BLUMSTEIN (1977). *Israel Journal of Medical Sciences*, **13**, 557-560

The antigen used in the counterimmunoelectrophoresis (CIE) test was prepared by sonicating a suspension of *Treponema pallidum* (10⁷ organisms/ml) in 0.02 mol/l phosphate buffer, pH 7.0. Pairs of wells 3 mm in diameter and 5 mm between

centres were cut in a 0.85% agarose gel in 0.06 mol/l barbital buffer, pH 8.2. Antigen was placed in the cathodal and serum in the anodal wells and a constant voltage of 60 V at 4 mA passed for 45 minutes.

The CIE test was compared with the FTA-ABS test on sera from 400 patients with suspected syphilis. There was 96% agreement between the results. Twelve sera were positive only with the FTA-ABS test, and syphilis was diagnosed in 11 of these cases. Four sera were positive with the CIE but not with the FTA-ABS test; these patients had primary syphilis. The CIE test was also compared with the Reiter protein complement-fixation test (RPCFT) on a further 400 sera; the results agreed in 86%. Both CIE and FTA-ABS tests were negative on 39 sera which gave false positive RPCFT results. The CIE test is claimed to offer the advantages of speed, simplicity, and economy over the FTA-ABS test.

A. E. Wilkinson

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Tests for treponemal antibody in CSF

H. W. JAFFE, S. A. LARSEN, M. PETERS, D. F. JOVE, B. LOPEZ, AND A. L. SCHROETER (1978). *Archives of Internal Medicine*, **138**, 252-255

Cerebrospinal fluid (CSF) specimens from 177 non-syphilitic patients were examined by the FTA and TPHA tests. The latter test was negative on all specimens, but one (0.56%) CSF specimen gave a reactive FTA result on undiluted CSF; this was negative when diluted in sorbent. Five of 15 CSF specimens from patients with latent syphilis but without clinical evidence of neurosyphilis and with cell counts and protein levels within normal limits gave positive FTA tests when examined undiluted, but only one specimen was still positive after dilution in sorbent; all gave negative TPHA tests. Those patients with positive CSF-FTA tests tended to have higher serum FTA titres than those in which the FTA test on CSF was negative. Possible contamination of CSF by serum during lumbar puncture was studied by testing normal CSF to which FTA-positive blood had been added. A positive CSF-FTA test was found only when the red cell count exceeded $1.0 \times 10^3/\text{mm}^3$ ($1.0 \times 10^9/\text{l}$).

The case records of 29 patients with syphilis whose CSF-FTA tests had been found positive were reviewed. Twelve

had neurosyphilis (six asymptomatic); non-treponemal tests and the FTA-ABS test were positive in all these cases. Seventeen patients had latent syphilis; in 11 of these the FTA test was the only abnormal finding in the CSF and was not correlated with a history of treatment. The authors think that the CSF-FTA test should not be taken as diagnostic of neurosyphilis unless there is other supporting clinical or laboratory evidence.

A. E. Wilkinson

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Syphilis (Pathology and experimental)

Experimental studies on the action of penicillin therapy in late syphilis

P. COLLART AND M. POITEVIN (1978). *Bulletin de l'Academie Nationale de Medecine*, **161**, 595-601

A study conducted for over four years with 50 rabbits inoculated with *Treponema pallidum* (Nichols strain) and treated later showed that penicillin therapy (whatever dose was used) administered after a long period may no longer destroy all the *T. pallidum* which have invaded an organism; that the permanence of immobilising antibodies cannot correspond with a 'serological scar' but indicates the persistence of *T. pallidum* in the tissues; and that these treponemes escape the action of penicillin as they are dividing at long intervals of time and persist in the organism in a commensal state.

This phenomenon, well known in the pathology of infection, was defined by MacDermott as 'microbial persistence' and would cause relapses. These observations could be confirmed by studies of human syphilis.

Authors' summary

Role of cell-mediated immune mechanisms in syphilis in Ethiopia

P. S. FRIEDMANN AND J. L. TURK (1978). *Clinical and Experimental Immunology*, **31**, 59-65

Lymphocyte transformation tests were carried out on cells from 107 Ethiopian patients with syphilis (51 early, 31 latent, and 25 cardiovascular) and on a control group of 32 healthy seronegative persons. The antigens used for stimulation were a

suspension of virulent *Treponema pallidum* (Nichols strain), purified protein derivative of tuberculin (PPD), and phytohaemagglutinin (PHA).

Lymphocytes from the control group and from patients with early syphilis were not transformed by *T. pallidum*, but cells from some patients with latent infections and most of those with cardiovascular syphilis were responsive. Cells from 10 patients with latent syphilis showed a similar response to *T. pallidum* (Nichols) and to a strain isolated locally. Cells from all groups showed similar responses when incubated with PPD. Cells from the control and latent groups showed similar responses with PHA; those from patients with early syphilis showed greater stimulation than those from the controls, but cells from patients with late syphilis were less responsive (these patients were older, and response to PHA decreases with age). Stimulation by *T. pallidum* increased in half the patients after they had been treated, but the responses to PPD and PHA were unchanged. Plasma from patients with early syphilis was found to inhibit the response to PPD and PHA.

Early syphilis is common in Ethiopia, but its late manifestations are rare. There may be differences in the immunological responses of Ethiopians and Europeans infected with syphilis. Ethiopians do not usually develop cellular hypersensitivity to *T. pallidum* as detected by the transformation test and are spared the late manifestations of the disease; these may be caused by tissue damage from delayed hypersensitivity reactions.

A. E. Wilkinson

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Ribosomal ribonucleic acid synthesis by virulent *Treponema pallidum*

J. C. NICHOLS AND J. B. BASEMAN (1978). *Infection and Immunity*, **19**, 854-911

Effects of fatty acids on motility

retention by *Treponema pallidum* in vitro
H. M. MATTHEWS, H. M. JENKIN, K. CRILLY, AND P. L. SANDOK (1978). *Infection and Immunity*, **19**, 814-845

Unsustained multiplication of *Treponema pallidum* (Nichols virulent strain) in vitro in the presence of oxygen

P. L. SANDOK, H. M. JENKIN, H. M. MATTHEWS, AND M. S. ROBERTS (1978). *Infection and Immunity*, **19**, 421-442

Gonorrhoea (Clinical)

Gonorrhoea in women. Diagnostic, clinical, and laboratory aspects

D. BARLOW AND I. PHILLIPS (1978). *Lancet*, 1, 761-764

The case notes of women with gonorrhoea who attended the clinic at St Thomas' Hospital, London, during 1976 were reviewed; there were 607 infections. These were more frequent and occurred at an earlier age in Negro than in Caucasian women. The commonest presenting symptom was vaginal discharge (43%), but 40% of the patients had no symptoms; 4.9% had complications (salpingitis 25, disseminated infection 4). Material for smears and cultures was taken from the urethra, cervix, and rectum, and material from the oropharynx was cultured when the patient was a known contact. Of the patients 97.9% were diagnosed on the results of the first set of tests. Smears were positive in 53.4%, so that in these cases treatment could be given at the patient's first visit. In 30% of the cases gonococci were found at only one site (urethra 6%, cervix 18%, rectum 4.8%, and throat 1.5%). Urethral smears were positive in only 12.3% of the patients compared with 76.3% of positive cultures from this site; it is suggested that routine examination of urethral smears might well be omitted. If only cervical smears and urethral and cervical cultures had been examined 95.9% of the infections would have been diagnosed.

Of the infecting strains 31% showed diminished sensitivity to penicillin by a three-disc test; none had a MIC > 1 µg/ml. No evidence was found of *in vitro* resistance to spectinomycin or kanamycin, and only 3.3% were resistant to sulphamethoxazole (MIC > 16 µg/ml).

The authors think that the need for treatment of gonorrhoea in women on epidemiological grounds is small in this country. In their series it would have resulted in the treatment of only four of 16 women with gonorrhoea who defaulted but of 142 patients who were not infected.

A. E. Wilkinson

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Gonorrhoea screening in a prostitute population

B. O. LEEB, J. A. SEBASTIAN, AND R. SEE (1978). *Obstetrics and Gynaecology*, 51, 229-232

In Taipei, Taiwan, prostitutes are registered and required by law to be screened weekly with cervical cultures. Positive patients are treated with ampicillin, and a repeat culture is taken three days later then again at weekly intervals. The routine screening yields 8-10% of positive cultures.

The laboratory staff of Navy Medical Research Unit No. 2 were present at the government clinics and studied a group of 515 prostitutes, from whom cervical cultures were obtained. Infection rates were correlated with factors of age, length of employment, frequency of intercourse, and method of contraception.

Forty-three (8.3%) of 515 cultures were positive. The age factor was not significant. The gonorrhoea rate decreased with length of employment—that is, more experienced prostitutes had less infection—at a linear rate of 0.85% per year. The relation of frequency of intercourse to infection showed a 1.3% increase with each additional daily contact.

Oral contraceptives were used by 61% of the group, and condoms by 6.4%, but 23% took no contraceptive measures. The 21% positive rate of infection in condom users is contrary to findings of other authors. However, four of the seven positive patients had intercourse 5, 10, 15, and 20 times per day, and incorrect use of the condom could not be excluded.

The main conclusion of the authors is that the risk of gonorrhoea is directly related to the exposure rate during the period between screening.

N. A. Durham

Repeated gonorrhoea. An analysis of importance and risk factors

G. F. BROOKS, W. W. DARROW, AND J. A. DAY (1978). *Journal of Infectious Diseases*, 137, 161-169

This study was designed to assess the epidemiological importance of repeated infections due to *Neisseria gonorrhoeae* and to analyse variables potentially associated with repeated gonorrhoea. The retrospective analysis was of 7347 patients seen during one year, and the prospective study was of a stratified randomly selected sample of 429 patients. The 492 retrospectively identified repeaters constituted 0.06% of the county population and 6.7% of the clinic population. The 492 repeaters had 21.6% of the cases of gonorrhoea reported from the county and 29.4% of the cases

reported from the clinic. The repeaters tended to be younger than those without repeated infection ($P < 0.001$), male (62%), black (81.7%), and residents of areas of lower socioeconomic status than those who were not repeaters ($P < 0.001$). Most repeaters (73.5%) had not graduated from high school. Repeaters did not have significantly greater numbers of sexual partners ($P > 0.05$) nor greater exposure to prostitutes or clients than those who did not have repeated infections and less frequently had sexual contact while symptomatic. Intensive follow up of the small number of high-risk repeaters and their contacts could result in a major reduction in the number of reported cases of gonorrhoea.

Authors' summary

Gonococcal disease presenting as right upper quadrant pain (Fitz-Hugh-Curtis syndrome)

L. G. DONOWITZ AND J. A. LOHR (1978). *Clinical Pediatrics*, 17, 295-296

Gonococcal arthritis in the elderly

S. E. STRAUS, J. V. VEST AND R. H. GLEW (1978). *Southern Medical Journal*, 71, 214-215

Gonorrhea screening in teenage registrants of a children and youth project. Use of vaginal and urethral swabs in asymptomatic teenagers

M. B. MCCHESENEY, A. CHANG, AND H. M. WALLACE (1978). *Clinical Pediatrics*, 17, 266-276

Gonococcal infections in children 14 years and younger. Epidemiologic and other lessons drawn from a survey of 30 instances

Y. M. FELMAN, D. C. WILLIAM, AND M. C. CORSARO (1978). *Clinical Pediatrics*, 17, 252-258

Gonorrhoea (Microbiology)

Studies on the influence of antigens on the results with the gonococcal complement fixation test in patients with uncomplicated and complicated gonorrhoea
E. SANDSTROM AND D. DANIELSSON (1977). *Acta Dermatovenereologica*, 57, 547-552

Three groups of patients were studied using a standard complement fixation test with three different antigens, two local and one from a centre 200 km

distant. It was found that antigen from locally isolated gonococci gave more positive results in patients with uncomplicated gonorrhoea (male-female ratio 33:21) and in culture-negative female gonorrhoea suspects but not in patients with disseminated gonococcal infection (DGI). Thirty-nine per cent of patients with uncomplicated gonorrhoea and 10% of negative suspects were positive at a titre of 1 in 4 or greater (the usual sign \geq has surely been printed the wrong way round throughout the paper, where it appears as \leq). The selection of groups in this work seems open to criticism in that males and females are combined, the DGI cases all came from the centre 200 km distant, and there are no non-clinic controls.

Brian Evans

Rapid identification of *Neisseria gonorrhoeae* and *Neisseria meningitidis* by enzymatic profiles

R. F. D'AMATO, L. A. ERIQUEZ, K. M. TOMFOHRDE, AND E. SINGERMAN (1978). *Journal of Clinical Microbiology*, 7, 77-81

Identification is based on the liberation of chromogenic groups from aryl-substituted substrates by enzymes present in the organism under investigation. Forty-eight substrates tested were reduced to a final 10 in respect of their value in differentiation and reproducibility. This procedure permits identification within four hours of primary isolation on modified Thayer-Martin medium and is thus extremely rapid. *Neisseria gonorrhoeae* showed high levels of esterase activity which may facilitate its proliferation on mucous membranes.

Brian Evans

Simple method for detection of penicillinase-producing *Neisseria gonorrhoeae*

W. HODGE, J. CIAK AND E. C. TRAMONT (1978). *Journal of Clinical Microbiology*, 7, 102-103

This method utilises distortion in the zone of inhibition produced by a central penicillin disk on the growth of *Staphylococcus aureus* when a penicillinase-producing organism is streaked radially from the disk. Commercially available dilutions of penicillinase enable the amount of enzyme produced by any organism to be quantitated.

Brian Evans

Feasibility of screening for penicillinase-producing *Neisseria gonorrhoeae* from primary culture plates by using a rapid microacidometric test

A. S. WEISSFELD, G. D. SANNER, J. P. CHILDRESS, J. D. DYCKMAN, T. W. HUBER, AND R. P. WILLIAMS (1977). *Antimicrobial Agents and Chemotherapy*, 12, 703-706

This test utilises the production of penicilloic acid by β -lactamase with resultant colour change in a pH indicator; penicillin and phenol red form an indicator solution which is dispensed into the wells of a microtitre plate, followed by the suspension of up to five bacterial colonies from a primary culture plate. β -lactamase production is signified by a yellow colour change within five minutes, although the plates were read after half an hour to exclude a false-negative reading. Exposure to oxidase reagent had no effect on the reaction. The importance of testing several colonies from the primary culture is emphasised, bearing in mind that up to 30% of the population in a β -lactamase infection may be enzyme negative.

Brian Evans

Identification of clinical isolates of *Neisseria gonorrhoeae* by a coagglutination test

M. BARNHAM AND A. A. GLYNN (1978). *Journal of Clinical Pathology*, 31, 189-193

Culture diagnosis of gonorrhoea. Comparison between two standard laboratory methods and a commercial gonococcal culture kit (Kvadricult)

D. DANIELSSON, E. SANDSTROM, J. KJELLANDER AND H. M. G. WALLMARK (1978). *Acta Dermatovenereologica*, 58, 69-74

Inhibition of *Neisseria gonorrhoeae* by aerobic and facultatively anaerobic components of the endocervical flora. Evidence for a protective effect against infection

J. H. SAIGH, C. C. SANDERS, AND W. E. SANDERS, JUN (1978). *Infection and Immunity*, 19, 704-710

Effect of benzylpenicillin on the synthesis and structure of the cell envelope of *Neisseria gonorrhoeae*

E. W. GOODELL, M. FAZIO, AND A. TOMASZ (1978). *Antimicrobial Agents and Chemotherapy*, 13, 514-532

Gonorrhoea (Therapy)

Treatment of gonococcal proctitis

N. J. FIUMARA (1978). *Journal of the American Medical Association*, 239, 735-737

A group of 1533 homosexual males were examined for gonorrhoea at the Boston Dispensary Skin Clinic. These patients were generally five years older than the heterosexual males attending the clinic and 10% of them were aged 45 to 49.

Rectal specimens were planted directly on Thayer-Martin medium. Positive cultures were obtained in 213 (13.7%), and 173 of them were treated with single doses of 4g spectinomycin hydrochloride given intramuscularly in two sites. Follow-up cultures were done on 127 (73.4%) of these patients who returned one week after treatment. It appeared that this was effective treatment for gonococcal proctitis, as negative cultures were obtained in all of them.

The author suggests reasons for the increasing problem of gonococcal proctitis and draws attention to the need for taking a complete history of the sexual practices of all males with gonococcal urethritis.

C. S. Ratnatunga

Clinical response of patients with gonococcal endocervicitis and endometritis-salpingitis-peritonitis to doxycycline

G. R. G. MONIF, S. L. WELKOS, AND H. BAER (1977). *American Journal of Obstetrics and Gynaecology*, 129, 614-622

This study evaluates the clinical response of 25 patients with gonococcal endocervicitis associated with pelvic inflammatory disease to treatment with doxycycline alone.

Criteria for inclusion in the study were: the presence of acute pelvic inflammatory disease with physical signs of peritoneal involvement of sufficient intensity to warrant admission to hospital; bacteriological evaluation of the cul-de-sac as a result of culdocentesis; and the recovery of *Neisseria gonorrhoeae* from the endocervix and/or endometrial cavity.

Treatment consisted of 200 mg doxycycline on admission followed by 100 mg 12-hourly, the intravenous route being used exclusively for the first 48 hours. Therapy was considered satisfactory if

within 36 hours the patient's fever subsided to 37.4°C, and there was significant resolution of the abdominal findings.

The patients were divided into four groups according to the results of the cul-de-sac culture: (group 1) gonococcal endocervicitis-endometritis-salpingitis, 10 patients; (group 2) as in group 1 but with gonococcal peritonitis, three patients; (group 3) as in group 2 but with polymicrobial peritonitis, five patients; (group 4) gonococcal endocervicitis and polymicrobial peritonitis, seven patients.

Patients in groups 1 and 2 showed excellent clinical response to the treatment. When a polymicrobial peritonitis was present alone or in conjunction with a gonococcal peritonitis the response to treatment was not so good. While the presence of *in vitro* resistant organisms to doxycycline in the cul-de-sac culture did not preclude a good clinical response, the absence of such organisms correlated well with a good clinical response.

C. S. Ratnatinga

Penicillinase-producing *Neisseria gonorrhoeae*. Results of surveillance in the United States

M. S. SIEGEL, C. THORNSBERRY, J. W. BIDDLE, P. R. O'MARA, P. L. PERINE, AND P. J. WIESNER (1978). *Journal of Infectious Diseases*, **137**, 170-175

In September 1976 the Center for Disease Control (Atlanta, Georgia) initiated surveillance for cases of infection due to penicillinase-producing *Neisseria gonorrhoeae* in the United States. One hundred and ninety-one cases of penicillinase-producing gonococcal infection were confirmed up to 30 June 1977. Of 177 cases, for which histories of sexual exposure were available, 69 were traced to sexual contact in the Far East, and one case was traced to sexual contact in West Africa. Of 181 cases for which clinical information was available, 174 were uncomplicated anogenital infections, but local complications, such as salpingitis, epididymitis, and a Bartholin's gland abscess, were reported. Spectinomycin is the only drug now recommended by the US Public Health Service for treatment of gonorrhoea that is effective against uncomplicated infections due to penicillinase-producing gonococci. For these organisms, the distribution of minimal inhibitory concentrations (MICs) of penicillin, ampicillin, tetracycline, erythromycin, and spectinomycin was higher

than and significantly different from the distribution of MICs for isolates of non-penicillinase-producing gonococci collected in the United States. Since surveillance began the incidence of confirmed cases of penicillinase-producing gonococcal infection has decreased from 20.8 cases per month in 1976 to 16.8 cases per month in 1977.

Authors' summary

In vitro study of susceptibility of 200 *Neisseria gonorrhoeae* strains to seven antibiotics

A. AMSELLEM AND A. DAMMIRON (1977). *Annales de Dermatologie et de Venerologie*, **104**, 899-902

Non-specific genital infection

Chlamydia trachomatis endocarditis

J. N. VAN DER BEL-KAHN, C. WATANAKUNAKORN, M. G. MENEFEE, H. D. LONG AND R. DICTER (1978). *American Heart Journal*, **95**, 627-636

A case of infective endocarditis due to *Chlamydia trachomatis* immunotype F is reported. Multiple negative blood cultures were a major deterrent from the initial diagnosis of infective endocarditis. Postmortem ultrastructural identification of *Chlamydia* in the aortic valve vegetation led to an intensive retrospective study of retrieved serum samples using micro-immunofluorescent tests. Likewise an unusual echocardiographic finding was discovered to be the ultrasonic visualisation of an aortic ring abscess. No similar case could be found in the literature. Clinicopathological correlations are presented.

Authors' summary

Chlamydia trachomatis as possible cause of peritonitis and perihepatitis in young women

J. W. MULLER-SCHOOP, S. P. WANG, J. MUNZINGER, H. U. SCHLAPFER, M. KNOBLAUCH, AND R. W. AMMANN (1978). *British Medical Journal*, **1**, 1022-1024

Of 11 young women with acute peritonitis proved by laparoscopy, seven of whom also had perihepatitis, nine had serological evidence of recent infection with *Chlamydia trachomatis*. In five of these nine patients high antibody titres to chlamydiae were found without laboratory evidence of gonococcal infection, while

the other four had evidence of simultaneous gonococcal infection.

C. trachomatis may play an important part in peritoneal inflammation previously attributed only to gonococci.

Authors' summary

Parasite-specified phagocytosis of *Chlamydia psittaci* and *Chlamydia trachomatis* by L and HeLa cells

G. I. BYRNE AND J. W. MOULDER (1978). *Infection and Immunity*, **19**, 598-606

Phagocytosis of the 6BC strain of *Chlamydia psittaci* and the lymphogranuloma venereum 440L strain of *Chlamydia trachomatis* by L cells and HeLa 229 cells occurred at rates and to extents that were 10 to 100 times greater than those observed for the phagocytosis of *Escherichia coli* and polystyrene latex spheres. Both species of *Chlamydia* were efficiently taken up by host cells of a type they had not previously encountered. Phagocytosis of chlamydiae was brought about by the interaction of parasite surface ligands with elements of the host cell surface. The chlamydial ligands were readily denatured by heat, were masked by antibody, and were resistant to proteases and detergents. The host cell components were reversibly removed by proteases. Chlamydial phagocytosis was inhibited when host cells were incubated for many hours with cycloheximide. It was suggested that the presence on the chlamydial cell surface of ligands with high affinity for normal, ubiquitously occurring structures on the surface of host cells is an evolutionary adaptation to intracellular existence. The term parasite-specified phagocytosis was used to describe the efficient phagocytosis of chlamydiae by nonprofessional phagocytes and to distinguish it from the host-specified immunological and non-immunological phagocytosis carried out by professional phagocytes.

Authors' summary

In vitro assays of the efficacy of antimicrobial agents in controlling *Chlamydia trachomatis* propagation

C. K. LEE, N. R. BOWIE, AND F. R. ALEXANDER (1978). *Antimicrobial Agents and Chemotherapy*, **13**, 441-445

The antimicrobial susceptibility of a low-laboratory-passage, slow-growing, genital *Chlamydia trachomatis* strain was studied by five different procedures with the use of McCoy cells pretreated with

5-iodo-2-deoxyuridine. The effects of antimicrobial agents when added to cultures on day 0 or day 2 after inoculation with *C. trachomatis* and the effects of washing and reincubating treated cultures in antimicrobial-free media were investigated. Tetracycline and erythromycin inhibited *C. trachomatis* growth at concentrations attainable in human serum, although their actions were reversible, and significantly higher concentrations were needed to 'cure' 48-hour infected cultures. On a weight basis, spectinomycin was relatively ineffective in inhibiting *C. trachomatis* growth. The minimal inhibitory concentration of penicillin measured by our assay procedures was higher than that reported by other investigators. The five assay procedures used in this study were reproducible, and our results indicate that we can obtain more pertinent information about the efficacy of an antimicrobial agent in controlling *C. trachomatis* growth by using a combination of these assays than by simple minimal inhibitory concentration determinations, as had been previously described by other investigators. In addition, we failed to demonstrate changes in tetracycline susceptibility of *C. trachomatis* isolates from two patients who had received tetracycline therapy.

Authors' summary

Comparison of erythromycin stearate and oxytetracycline in the treatment of non-gonococcal urethritis: their efficacy against *Chlamydia trachomatis*

J. D. ORIEL, G. L. RIDGWAY, AND S. TCHAMOUROFF (1977). *Scottish Medical Journal*, **22**, 375-380

The effectiveness of oxytetracycline 250 mg six hourly for two weeks and erythromycin stearate 500 mg 12 hourly for two weeks in the treatment of non-gonococcal urethritis (NGU) have been compared; cell culture for *Chlamydia trachomatis* was performed before and after treatment. There was no significant difference between the results obtained with the two antimicrobials. Both were clinically effective in the treatment of *Chlamydia*-positive NGU. Response to therapy was rapid; two weeks after treatment began, only five (14%) of 35 men treated with oxytetracycline and four (13%) of 30 men treated with erythromycin stearate still had urethritis. Clinical improvement was accompanied in the majority of cases by failure to re-isolate *C. trachomatis*, but a small number of

men who had not been exposed to the risk of reinfection yielded chlamydiae after therapy with oxytetracycline or erythromycin stearate.

The results of treatment of men with NGU from whom *C. trachomatis* had not been isolated were similar to those obtained in isolation-positive patients; again, there was no significant difference in the efficacy of the two antimicrobials. It is concluded that erythromycin stearate is a useful alternative to tetracyclines in the treatment of NGU.

Authors' summary

Chlamydial pneumonia in infants

(Leading article)

M. R. HAMMERSCHLAG (1978). *New England Journal of Medicine*, **298**, 1083-1084

An improved method for demonstrating the growth of chlamydiae in tissue culture

F. W. A. JOHNSON, L. Y. J. CHANCERELLE, AND D. HOBSON (1978). *Medical Laboratory Sciences*, **35**, 67-74

Serologic studies of human genital mycoplasmas. Distribution of titers of mycoplasmacidal antibody to *Ureaplasma urealyticum* and *Mycoplasma hominis* in pregnant women

I. JUEY-SHIN, L. LIN, K. RADNAY, M. I. KENDRICK, B. ROSNER, AND E. H. KASS (1978). *Journal of Infectious Diseases*, **137**, 266-273

Isolation of mycoplasmas from the genital tract of women with reproductive failure, sterility, or vaginitis

B. BERCOVICI, H. HAAS, T. SACKS, AND A. LAUFER (1978). *Israel Journal of Medical Sciences*, **14**, 347-352

Candidosis

Chitin synthesis in *Candida albicans*: comparison of yeast and hyphal forms

P. C. BRAUN AND R. A. CALDERONE (1978). *Journal of Bacteriology*, **133**, 1472-1500

Genital herpes

Tampon culture for quantitation of cervicovaginal herpes simplex virus

E. E. EKWO AND M. G. MYERS (1978). *Journal of Medical Virology*, **2**, 1-5

From 10^1 to 10^6 TCID₅₀ (mean tissue culture infective doses) per ml HSV 1 and 2 can be quantitatively recorded from vaginal tampons. Tampons and sterile cotton swabs are equally sensitive in recovering HSV1 and 2. Direct cotton swab cultures of the cervix and cervico-vaginal tampon cultures from the same patients recovered similar quantities of HSV, ranging from 1.5 to 6.5 log₁₀ TCID₅₀/ml in five patients.

Authors' summary

Genital herpes and the fluorescent treponemal antibody absorption test

Z. A. BROWN AND M. A. STENCHEVER (1978). *Obstetrics and Gynecology*, **51**, 186-187

Results of testing sera from 55 patients with recurrent genital herpes in the fluorescent treponemal antibody absorption (FTA-ABS) test were compared with results from 37 control patients. Nineteen control patients were complement-fixation positive and 18 were complement-fixation negative to the herpes simplex virus. Genital herpes did not produce false-positive FTA-ABS results, although a high incidence of borderline results were seen in both the control group and the group with recurrent herpes.

Shirley Richmond

Inapparent sexual transmission of herpes simplex virus type-II infection with subsequent neonatal death (case report)

M. R. SPENCE (1978). *American Journal of Obstetrics and Gynecology*, **130**, 590

Other sexually transmitted diseases

Topical treatment of penile condylomata acuminata with podophyllin,

podophyllotoxin, and colchicine

G. VON KROGH (1978). *Acta Dermatovenereologica (Stockholm)*, **58**, 163-168

The effects of alcoholic solutions with 20% podophyllin from *Podophyllum peltatum* and *Podophyllum emodi*, 8% podophyllotoxin, and 8% colchicine, when applied to penile condylomata acuminata in 227 men, were statistically alike. Of the patients initially judged to be cured after one or two applications,

13% showed recurrence, thus bringing down the permanent cure frequency to only 43%. Local side effects were absent after only half the series of colchicine applications, whereas as much as about three-quarters of the treatment course with podophyllin and pure podophyllotoxin could be completed without provoking discomfort. Warts in the urinary meatus healed significantly less well than warts on the other genital mucous membranes. Eighty-nine per cent of patients who had previously been cured of condylomata became wart-free after one or two treatments, as opposed to only 40% of those who had never had this wart type previously. The use of the commercially available colchicine offers an opportunity to establish a standardised therapy; following application of an 8% solution, rinsing off should be performed after 6–8 hours.

Author's summary

Comparison of specimen collection and laboratory techniques for isolation of *Haemophilus ducreyi*

G. W. HAMMOND, C. J. LIAN, J. C. WILT, A. R. RONALD (1978). *Journal of Clinical Microbiology* 7, 39–43

Chancroid is a rare disease in the western world. Confirmation of a clinical diagnosis may be difficult owing to the lack of a suitable serological technique and the difficulties of culture. During a localised outbreak of chancroid in Winnipeg, Canada, opportunity was taken to examine the efficiency of various isolation techniques.

Sixteen patients with a clinical diagnosis of chancroid were included in the study. Two techniques were used. Technique A involved the inoculation of a pooled aspirate into clotted rabbit blood (RB), RB plus vancomycin, and semi-solid chocolate agar (CA) plus vancomycin. After 24–48 hours incubation each primary culture was subcultured on to CA, CA plus vancomycin, and CA plus vancomycin and polymyxin. Technique B involved the direct inoculation of swabs on to CA, CA plus vancomycin, and CA plus vancomycin and polymyxin.

Nine strains of *Haemophilus ducreyi* were recovered from the 16 patients. One culture-negative patient had the typical chaining morphology noted in RB medium, but the solid media were overgrown with *Neisseria gonorrhoeae*. Two other culture-negative patients had clinically early lesions. Growth of the organism was in general greater on CA plus vancomycin. Direct inoculation produced results comparable with the two-stage enrichment technique and may prove useful as a routine procedure when clinically indicated.

G. L. Ridgway

Treatment of perianal and anal condylomata acuminata. A new operative technique

J. F. S. THOMSON AND R. H. GRACE (1978). *Journal of the Royal Society of Medicine*, 71, 181–185

Miscellaneous

Urine bacterial counts after sexual intercourse

R. M. BUCKLEY, M. MCCUCKIN AND R. R. MACGREGOR (1978). *New England Journal of Medicine*, 298, 321–329

Sexual intercourse as a cause of urinary tract infection (UTI) has long been accepted, but the mechanisms have been poorly explored. In this study of 20 volunteer couples, mid-stream urine specimens (MSUs) were cultured quantitatively both before and after sexual intercourse. Seventy-six sexual intercourse episodes were monitored.

In 23 (30%) of the episodes a ten-fold rise in MSU colony counts was found after sexual intercourse. The rise in colony counts was transient and usually disappeared within 48 hours. The time after coitus at which the first MSU specimen was collected did not seem to make any difference, and rises occurred in those couples voiding immediately after, and 6–10 hours after, coitus. In MSUs collected as controls where no sexual intercourse took place there was

no increase in colony counts between specimens.

M. C. Kelsey

Microbiological flora of penile ulcerations

T. CHAPEL, W. J. BROWN, C. JEFFRIES, AND J. A. STEWART (1978). *Journal of Infectious Diseases*, 137, 50–56

One hundred consecutive men with penile ulcerations were microbiologically investigated. In 97, a polymicrobial flora was found which included aerobic and anaerobic bacteria, herpes simplex virus, *Mycoplasma hominis*, and *Ureaplasma urealyticum*, yeasts, fungi, and gonococci. In 53 patients herpes simplex virus or *Treponema pallidum* were considered causative of the ulceration. In some, more than one recognisable pathogen was present, especially in patients with apparent herpetic ulceration. The origin of the ulcers was traumatic in seven patients, due to a fixed drug eruption in one patient, and unknown in 37 patients. In clinically diagnosed chancroid *Haemophilus ducreyi* was recovered from only two patients, and in several others a variety of organisms were isolated; this suggests that clinical chancroid may be caused by several organisms.

G. W. Csonka

Sexual intercourse and urinary infections (Leading article)

C. M. KUNIN (1978). *New England Journal of Medicine*, 298, 336–337

Corynebacterium vaginale urinary tract infection in a man (Letter)

G. F. ABERCROMBIE, J. ALLEN, AND R. MASKELL (1978). *Lancet*, 1, 766

HL-A antigens in Behcet's disease. A family study

M. NAHIR, Y. SCHARF, O. GIDONI, A. BARZILAI, R. FRIEDMAN-BIRNBAUM, AND S. HAIM (1978). *Dermatologica*, 156, 205–208

Rapid slide test for penicillinase

J. E. ROSENBLATT AND A. M. NEUMANN (1978). *American Journal of Clinical Pathology*, 69, 351–353